

# Long Island Botanical Society

Vol. 17 No. 3

The Quarterly Newsletter

Summer 2007

## *Dewalquea*, a Fossil Leaf from the Upper Cretaceous of Lloyd Neck, Long Island

Andrew M. Greller, Ph.D., and Michael Goudket

Pursuant to a permit from the NYS Department of Parks, the senior author has been collecting specimens from the Upper Cretaceous outcrop in Caumsett State Park, on Lloyd Neck, Town of Huntington, Suffolk County, New York. This season, after heavy erosion from winter storms, we found a new locality on the beach beneath the steep cliffs (38 m above sea level) that exhibits badlands erosion. The locality is characterized by semiconsolidated gravel that has a deep brown-red stain and contains cobbles of red iron sandstone. We have found that the fossil leaf called *Dewalquea* has been especially common in this deposit (Fig. 1).

Reference to Newberry (1895) and Hollick (1906) reveals that *Dewalquea* is only known definitively from the Raritan Formation (Turonian age) of New Jersey (Table 1). Hollick's southern New England specimens (Magothy Formation, Coniacian-Santonian) are fragments and do not show the characteristic palmate branching of the leaf into fingerlike, projecting leaflets, some of which are fused at their bases (cf. Figs. 1 and 2).

### ***Dewalquea* in the New Jersey Raritan Formation**

The following discussion of *Dewalquea* is extracted from Cornet (2007).

According to Cornet (2007), *Dewalquea* is the principal fossil leaf of the Raritan Formation that crops out in Sayreville, New Jersey. Specifically, he states, "Three plant-bearing facies [are] documented in the Crossman Clay Pit....Facies A [is a] light gray, silty claystone facies in the uppermost part of the South Amboy Fire Clay unit." Cornet goes on to state that "Facies A produce[s] the largest and best preserved angiosperm leaves at the quarry....Deeply lobed palmately veined leaves of the *Dewalquea* type were most common. Berry (1919) found that *Dewalquea* with entire and toothed leaf margins from the same locality belonged to the same species, even though they were given separate species names in the

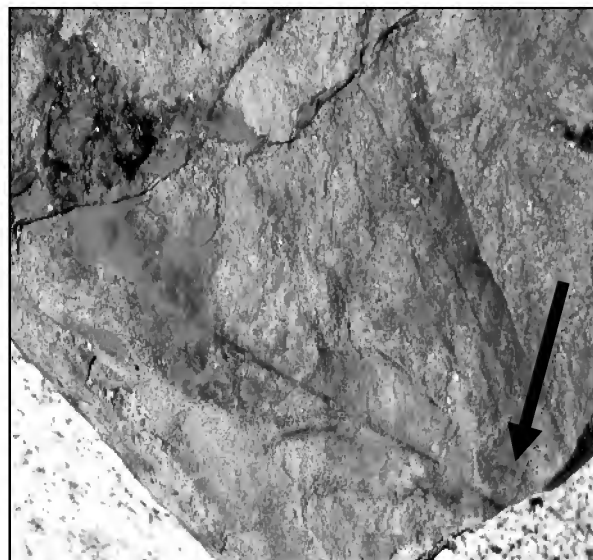


Figure 1A. *Dewalquea* sp.: impression of two leaflets in red iron sandstone (color-enhanced to improve contrast); collected by A.M. Greller and M. Goudket at Caumsett State Historic Park, on 22 May 2007. Black arrow points to place of fused leaflets.



Figure 1B. *Dewalquea gelindensis* Paleocene of Limburg, Belgium: to show a nearly complete leaf.

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## Long Island Botanical Society

Founded: 1986

Incorporated: 1989

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

Visit the Society's Web site  
[www.libotanical.org](http://www.libotanical.org)

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## Society News

Twenty LIBS members attended the farewell dinner for Skip and Jane Blanchard on Tuesday, May 8, 2007, at the historic Milleridge Inn in Jericho. Steve Young, the state botanist for NY Natural Heritage Program in Albany, and Chris Mangles, former LIBS vice president now living in Connecticut, traveled long distances to join the event. During the dinner, Lois Lindberg recalled (with visual aids) many "Skip-isms" from past years. Steve Young expressed appreciation for many years of botanical service. Eric Lamont summarized Skip's and Jane's contributions to LIBS during the past 20 years, and Barbara Conolly presented two gifts on behalf of the Society and read a poem composed for the occasion (see pg. 28). Skip and Jane have retired and moved to Florida, but they still plan on keeping in touch with LIBS.

At the June 12, 2007 meeting of the LIBS Executive Board and general membership, two important items of business were approved:

- (1) New officers and committee chairpersons were elected. Dr. Andrew Greller will serve as the new LIBS vice president, replacing Skip Blanchard; Bill Titus will serve as the new chair of the Conservation Committee, replacing Andy Greller; David Laby will serve as the new chair of the Field Trip Committee, replacing Skip Blanchard; and Kathleen Gaffney will serve on the Hospitality Committee, replacing Jane Blanchard. Sincere appreciation is expressed to everyone who has served LIBS in the past, and thank you to everyone who has agreed to accept new responsibilities.
- (2) The number of monthly meetings was changed. Beginning in 2008, January and February meetings will be discontinued because inclement weather can make traveling difficult and dangerous for our invited speakers, guests, and members. The fall schedule of monthly programs will occur during September, October, November, and December. Spring programs will take place in March (Members' Night), April, May, and June (the annual barbecue).

### Plant sightings

Joanne Tow reported seeing lady's-slippers (*Cypripedium acaulis*) on the Cold Spring Harbor hiking trail. Margaret Conover found mile-a-minute weed (*Polygonum perfoliatum*) in her flower garden in Stony Brook.

### Online

Past issues of the Long Island Botanical Society Newsletter are available online at the Society's Web site <http://www.libotanical.org/newsletters.html>

Glenn and Sandy Richard have posted a map with photographs from the May 12 Long Island Botanical Society field trip to Flax Pond at <http://flaxpond.googlepages.com/>

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literature. At least three species (taxa) are recognized at the Crossman Clay Pit (*Dewalquea insignis*, *D. trifoliata*, and *D. sp.*”

### Affinities of *Dewalquea*

According to the 1911 edition of Encyclopedia Britannica section on Palaeobotany, “*Dewalquea* [is] a ranunculaceous genus allied to the hellebore [*Helleborus* spp.].” Examination of garden specimens of *Helleborus niger* and *H. foetidus* reveals palmately compound leaves in which the leaflets are smooth-margined near their bases and toothed toward their tips. These leaves all have 9–11 leaflets, usually with a central leaflet and two pairs of leaflets on each side. Fusions are seen occasionally of the lateral leaflets at their bases (Fig. 3), recalling Fig. 1. Cornet (2007) briefly compares *Dewalquea* leaves from Sayreville to *Liquidambar* and *Platanus* leaves. He concludes, “Only when flowers/fruits...are found in association with *Dewalquea* can an affinity be established with certainty.”

### Conclusion

Based on the widespread occurrence of *Dewalquea* in the Turonian-aged, Raritan Formation of New Jersey, and its questionable occurrence in the Coniacaeen-Santonian-aged, Magothy Formation of Long Island and southern New England, we tentatively conclude that the Raritan Formation now shows an exposure on the beach at Caumsett State Park. Exposure is probably the result of the removal of overlying sand and gravel by strong winter storms.

### References

Berry, E. W., 1919. Upper Cretaceous flora of the eastern Gulf Region in Tennessee, Mississippi, Alabama, and Georgia. U.S. Geological Survey, Professional Paper 112, 175 pp.

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Everhard, Mike. 2004. A Cretaceous Time Scale. <http://www.oceansofkansas.com/timescale.html> (accessed 27 May 2007).

Hollick, Arthur. 1906. The Cretaceous Flora of Southern New York and New England. U.S. Geological Survey Monograph, Vol. 50, 219 pp.

Newberry, John Strong. 1895. The Flora of the Amboy Clays (edited posthumously by Arthur Hollick). U.S. Geological Survey Monograph, Vol. 26, 260 pp.

*Dr. Andrew M. Greller is Professor Emeritus, Biology Department, Queens College, CUNY.*

Table 1. The approximate duration of ages that comprise the Upper Cretaceous (Everhard, 2004).

Maastrichtian	65.4 – 71.3 MYA (5.9 MY)
Campanian	71.3 – 83.5 MYA (12.2 MY)
Santonian	85.5 – 86.3 MYA (0.8 MY)
Coniacian	86.3 – 88.7 MYA (2.4 MY)
Turonian	88.7 – 93.3 MYA (4.6 MY)
Cenomanian	93.3 – 98.5 MYA (5.2 MY)



Figure 2. “Restoration of *Dewalquea smithii* Berry (1919)” (Cornet 2007).

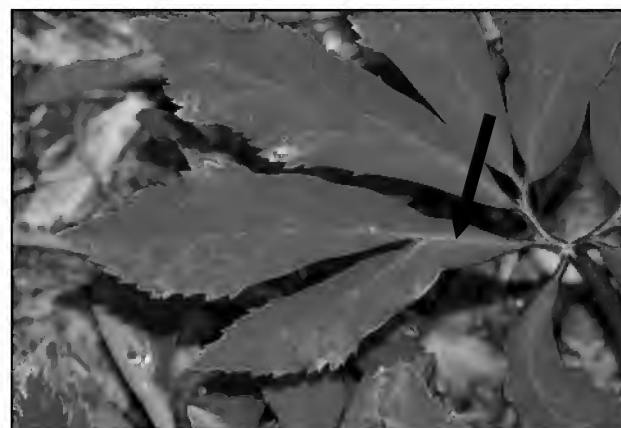


Figure 3. *Helleborus niger* leaflets; arrow points to area of fusion of two leaflets (A. M. Greller, 28 May 2007).



# You Can Help Update the Rare Plant Watch List Species

Steve Young

There are number of Long Island plant species on the New York Natural Heritage Program watch list that need to be reevaluated and updated to find out if their numbers have decreased to the point that they should be put back on our active list for better protection.

Some of the species were probably put on the watch list prematurely before enough evidence could be gathered while others might be in areas that have seen many changes over the last 20 years since they were first surveyed. They are part of the list of about 25 watch list plants statewide that will be undergoing more detailed surveys in the next few years to reevaluate their status. If you would like to help in this effort you may request a Microsoft Excel file that lists the plants and their locations and habitats as well as the year they were last seen. Then have fun in the field hunting them down. If you find them you can send the results to the author to update their records.

## List of plants:

*Carex albicans* var. *emmonsii* (Emmons' sedge) – There are a couple of mid-1980s records from the Shadmoor area in East Hampton. Some botanists think that this sedge could be found much more often on Long Island if someone concentrated on finding it. Late May and June is the best search time.

*Cyperus odoratus* (fragrant flatsedge) – There are two 20-year-old records from the sandy areas in the Connetquot area and Overlook Beach on Jones Beach Island. This and the next three species are best searched for in late summer.

*Fuirena pumila* (dwarf umbrella-sedge) – This has about 20 locations on coastal plain pond shores that have not been updated since the mid-1980s. It's a very distinctive little plant when in fruit.

*Hydrocotyle umbellata* (manyflower marshpennywort) – There are 11 occurrences that were documented in the mid-1980s from pond shores and bogs in East Hampton, Southampton, and Brookhaven. Some plants have a double tier of flowers similar to *Hydrocotyle verticillata* (whorled marshpennywort), which is much more rare, so be careful in your identification.

*Lespedeza repens* (creeping lespe-deza) – There were eight locations documented in the mid-1980s on dry roadsides, grasslands, power lines, and pine barrens trails. Locations ranged from North Sea in Southampton west across Long Island to Staten Island.

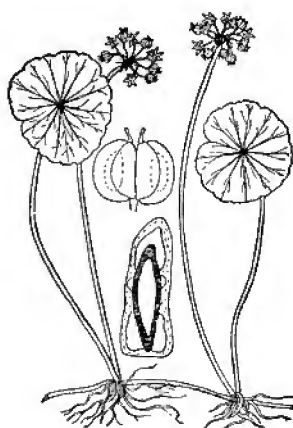


*Lespedeza repens*

*Luzula bulbosa* (bulbous woodrush) – Late May and June are the best times to search for this small woodrush. You need a keen eye to pick it out from the surrounding vegetation and to separate it from the more common *Luzula multiflora* by looking at the seed characters. Its range is restricted to the eastern end of Long Island and Shelter Island with about 13 occurrences from the mid-1980s. It occurs in maritime grasslands, along sand roads through dry oak woods, old fields, stabilized sand dunes, and sandy roadsides.

*Luzula echinata* (hedgehog woodrush) – There is little current information about this species on Long Island with only a few historical specimens known. It seems to occur in more moist habitats than *Luzula bulbosa* and it can be separated by looking at the angles of the inflorescence branches (see the key in volume 22 of *Flora of North America*). It also occurs west of Long Island into central New York.

*Polygala cruciata* var. *aquilonia* (drumheads) – This showy little plant has many historical records throughout Long Island and is restricted to the coastal plain. There are only about five or so records from the 1980s and 1990s so more documentation is needed. This plant is best surveyed in August and September and likes fresh to brackish moist to wet open sands where it has been found in a bulldozed roadbed through a maritime thicket, a mowed brackish meadow, coastal plain pond shores, and interdunal swales.



*Hydrocotyle umbellata*

Happy hunting!

Steve Young is the chief botanist,  
New York Natural Heritage Program.  
His e-mail address is [young@nyhnp.org](mailto:young@nyhnp.org)

## Perennial pepperweed

Laura Schwanof, RLA

Perennial pepperweed (*Lepidium latifolium*) is the most important invasive species identified at West Meadow Beach. According to the NYNHP, it has never before been recorded on Long Island and is among the top-ranking problematic species recommended for prevention, early detection, and eradication in this area.

Perennial pepperweed is an herbaceous perennial that reaches three to four feet in height. It was found on-site and on the adjacent County parkland occupying the extreme upper edge of the salt shrub zone, immediately landward of marsh elder. This invasive plant is native to southeastern Europe and southwestern Asia but has been reported in coastal New England. Similar to the aggressive form of common reed, perennial pepper-



weed poses a serious threat to native maritime ecosystems by creating large, dense, monospecific stands that displace native plants

and animals and can be very difficult to remove. Once established, perennial pepperweed grows from large perennial belowground roots or semi-woody crowns. According to the TNC, with the exception of continual flooding, no nonchemical treatments have been found to effectively control this weed; however, excellent control can be obtained with several herbicides. Perennial roots can remain dormant in the soil for several years, thus intense monitoring with early detection and removal is the best control measure for perennial pepperweed.

*Laura Schwanof is with Energy & Environmental Analysts, Inc., Stony Brook, New York.*

*Her e-mail address is lschwanof@eeaconsultants.com*

## BOOK REVIEW

*Wild Orchids of the Northeast: New England, New York, Pennsylvania, and New Jersey.* Paul Martin Brown with drawings by Stan Folsom. 367 pp. University Press of Florida. \$29.95 US. ISBN: 0-8130-3034-0. Paperback.

Do we really need yet another book on the orchids of the Northeast? As a native orchid enthusiast, my answer is unequivocally yes. Paul Martin Brown's intense devotion to morphological detail sets his orchid books apart from most others; he is almost fanatic in recognizing differences within a species. While some systematic botanists may argue that botanical literature is already overflowing with superfluous plant names, others recognize the value in formally documenting the wide range of morphological variation within plant species. And in much the same tradition as M. L. Fernald, Brown does not hesitate to put pen to paper and describe new taxonomic forms, varieties, and hybrids. In this book, I counted 33 infraspecific orchid taxa from the Northeast originally named by Brown during the past 12 years.

*Wild Orchids of the Northeast* is the eighth in a series of regional field guides of North American orchids by

Paul Martin Brown and published by University Press of Florida. The book is designed for anyone interested in orchid identification, taxonomy, distribution, and conservation, from beginner to expert. It is a complete revision and expansion of Brown's previous work on the subject and now includes all of Pennsylvania and New Jersey, a state never before covered in its entirety.

The book covers 79 species and varieties, 88 forms, and 15 hybrids. It includes an illustrated key to genera, workable keys to all species, extensive lists of infraspecific taxa and full treatment of synonymy, distribution maps, and species accounts extensively illustrated by high-quality photographs and line drawings. The 300+ color photographs are a real strength of the book.

Another strength of the book is the wide range of supplementary material, including an extensive section on where and how to find orchids at eight regional hot spots: (1) the Northwoods: bog, fen, and boreal forest; (2) Connecticut River Valley; (3) Central New York State; (4) Metropolitan Boston; (5) Cape Cod and Eastern Long Island; (6) the Catskills and Poconos; (7) the Pinelands of New Jersey and Cape May; and (8) the Central Alleghenies. I also appreciated the well-

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illustrated section on “cryptic species, species pairs, and varietal pairs.”

The taxonomy and nomenclature followed by Brown closely follows the *Flora of North America* treatment of the Orchidaceae published in 2002, with the exception of several species usually included in *Platanthera*. Brown splits out *P. nivea*, *P. clavellata*, and *P. integra* and includes them in *Gymnadeniopsis*, a transfer originally proposed by Rydberg in 1901 and favorably noted (but not followed) by FNA author Charles Sheviak. Brown continues to recognize *P. pallida* as a valid species endemic to eastern Long Island, New York, whereas Sheviak placed it in synonymy under *P. cristata*, but noted its “distinctive nature.” Brown corrected mistakes in previous publications such as the occurrence of *P. blephariglottis* var. *conspicua* in New York.

The author’s stated purpose of this book is “to assist the user in identifying the wild orchids of much of the northeastern United States. It is intended to be used primarily in the field and is designed for locating information easily while one foot is in the proverbial bog. The photographs have been taken in the field and are

intended to illustrate the species as the user will see them. They are neither studio shots nor great works of art, just good diagnostic photos that portray the plants in their habitats.” Brown is being too modest in describing his book and he goes way beyond accomplishing his goals. The Northeast is Brown’s original stomping grounds and he knows the territory as well as, if not better than anyone. He is intimately connected with these orchids and has spent countless hours pursuing and studying them. Fortunately for us, he enthusiastically shares his vast knowledge and experiences.

I recommend this reasonably priced book for anyone interested in our native orchids. It has been authored by one of the foremost orchidologists of the region and contains a wealth of information beautifully illustrated on high quality paper. No library will be complete without it.

Reviewed by Eric Lamont  
Honorary Research Associate  
Institute of Systematic Botany  
The New York Botanical Garden, Bronx, NY 10458

### LIBS to Host Botanists from Niagara Frontier Botanical Society

Members of NFBS will be arriving on Long Island on Tuesday, August 28, 2007 and will be staying at a hotel in the vicinity of Exit 61 off the LIE. LIBS will act as host on August 29, 30, and 31. The group plans on heading back to the Buffalo region on September 1. Eric & Mary Laura Lamont are coordinating three days of field trips for the visiting botanists. Mary Laura will lead a trip to Fire Island (Sunken Forest/Sailor’s Haven) and probably Orient Beach State Park and Moore’s Woods on the North Fork. Eric will probably lead trips to the Dwarf Pine Plains, Cranberry Bog Preserve, and if water levels are low, to the Coastal Plain Ponds in the Calverton/Manorville region. Currently, exact details of field trips have not yet been finalized, but if LIBS members are interested in joining please contact Eric and Mary Laura.



### Requests for Samples and Field Locations

Gerry Moore at the Brooklyn Botanical Garden seeks samples of shrubby willows (twigs, at least ½ inch in diameter) in order to determine if the nonnative florists’ willow, *Salix cineria/atrocineri* is present on Long Island. E-mail: gerrymoore@bbg.org

Marilyn Jordan of The Nature Conservancy seeks samples of the flowering branches and twigs of naturalized privets. There are a number of privet species on the landscape and proper ID is very important. E-mail: mjordan@tnc.org

Lisa Filippi of the Hofstra University Biology Department and newest LIBS member seeks help in locating large populations of *Lamium amplexicaule*, *Lamium purpureum*, *Lamium album* var. *barbatum*. E-mail: Lisa.Filippi@Hofstra.edu





## Field Trips

### SUNDAY, JULY 15, 2007, 10 A.M.-12 P.M.

Weeks in the Woods, *Belle Meade Road Town of Brookhaven Preserve, South Setauket, Suffolk County, NY*

Trip Leader: David Laby

Examine weeds and invasives that have intruded into the woods along a former wood road (now a path). There is quite a bit of *Aralia* in there and multiflora rose. Some blackberry fruit may be ripe. Away from the wood road, along mountain biking trails in surprisingly steep terrain, there are ferns and numerous chestnut suckers. One hundred years ago, much of this would have been dominated by American chestnuts.

**Directions:** Nesconset Highway (SR 347/Smithtown-Port Jefferson Bypass) from either east or west. Belle Meade Road is the third intersection east of the Nicolls Road/347 intersection, and is west of Wireless Road. Go north on Belle Meade, past the office buildings. Park along Belle Meade Road, near Automatic Transmission Technology (the northernmost building on west side of road).

### SUNDAY, AUGUST 18, 2007, 10 A.M. TO 1 P.M.

From Forest to Marshland, *East Hampton and Accabonac, Town of East Hampton Suffolk County, NY*

Trip leaders: Karen Blumer, John Potente

We will examine the oak-beech forest restored by Karen Blumer for the Suffolk County Water Authority, with forest plant ID and seeing how a forest construction site can be restored to local genotype, a great forest, and then to Accabonac harbor marshland where Larry Penny will join us to demonstrate a successful low-impact restoration of salt marsh mosquito-ditching. If it's hot, we may take a swim nearby. Bring bathing suits. Meet at The Springs General Store, 29 Old Stone Highway in Springs, NY

**Directions:** Take Springs-Fireplace Road north, about 4 miles, from Main Street in East Hampton, and right onto Old Stone Highway. Springs General Store is on the north side of Old Stone Highway, near its intersection with Springs-Fireplace Road. Please confirm during the prior week to Karen Blumer.

### SATURDAY SEPTEMBER 15, 2007 9 A.M.

*Weld Preserve, Village of Head of the Harbor, Suffolk County, NY*

Trip leader: Ray Welch

Freshwater wetlands, meadows, dry upland forest, and a beach community for late summer bloomers and exhausted post-bloomers. A Nature Conservancy property with limited parking. Meet at 9 a.m. at the north end of the Smithtown Library parking lot and we'll then car pool to the preserve. Smithtown Library is at the northeast corner of SR25, SR111 intersection in Smithtown Branch. For directions and other details, call Ray Welch the week prior to the field trip.

### FOR THE BLANCHARDS

May 8, 2007

Skip and Jane, Skip and Jane,  
Getting on that southbound train  
For lots of Live Oaks, moss and more  
Orchids, herps and birds galore,  
Butterflies till you cannot rest,  
Sea Cows, Panthers, and, what is best,  
A chance to see an Ivory-bill!  
Which makes L.I. just run-of-the-mill!

But what of those you left behind?  
Who will verify our every find?  
Who will kick-start all the Flora  
meetings and the field trips, few and more-a?  
Who'll provide the grub at Stony?  
Or label our idents as true or phony?

Skip and Jane, you must come back  
To add some zing to what we'll lack,  
And bring your southern observations north.  
Do Gainesville Lycopods shine forth?  
These words will never stand as fibs;  
You'll always **like a podium** at LIBS!

Barbara H. Conolly  
May 2007

**SUMMER GREEN**

Maple trees ample, green foliage  
 Luxuriant laps the chartruese  
 Village Green into dark green shadows,  
 Relief in the late afternoon.

Earlier, the soft sage green  
 Of a cotton teeshirt was refreshing  
 Under the umbrella of a large tree  
 In the noonday heat.

Soon I will be in a cabin  
 Where pale cool ferns  
 Are my endless horizon,  
 My green sea of renewal.

The green is pervasive  
 This summer day, from resilient blades  
 Of grass, to pithy liana,  
 to diverse translucent canopy,  
 Always a constant, forgotten at times,  
 We are part of this green flow – flexible,  
 Regenerative – we grow anew  
 As we share in the green  
 Transmutable light.

*Carolyn Emerson*

**Upcoming Programs**

**September 11, 2007\***

**Tuesday, 7:30 p.m.**

MARGARET CONOVER: "CHIA: THE REVIVAL OF AN ANCIENT AMERICAN CROP." Like amaranth and quinoa, chia was an important dicotyledonous seed crop of ancient American cultures. Although it is nutritionally superior to these grains, chia has become virtually unknown outside of its use in novelty products. This presentation will include chia tasting. Margaret is editor of the LIBS Newsletter and founder of an organization to promote the use of chia seeds for nutritional and science educational purposes.

Location: Museum of Long Island Natural Sciences,  
 Earth and Space Science Building  
 Gil Hanson Room (Room 123)  
 SUNY at Stony Brook, Stony Brook

**October 9, 2007\***

**Tuesday, 7:30 p.m.**

WEI FANG: "NATURE OR NURTURE: SOURCES OF VARIATION IN GROWTH, FORM, AND SURVIVAL IN DWARF AND NORMAL-STATURE PITCH PINES (*PINUS RIGIDA*, *PINACEAE*) OF LONG ISLAND PINE BARRENS." This talk is based on a recent publication in the American Journal of Botany (Fang *et al.*, 2006), about long-term transplant experiments (1996 to now) in the Long Island pine barrens. Wei received her Ph.D. from the Department of Ecology and Evolution, Stony Brook University, in 2003, and is currently an assistant professor at the Department of Biology, Long Island University, C.W. Post campus.

Location: Bill Paterson Nature Center,  
 Muttontown Preserve, East Norwich

\* Refreshments and informal talk begin at 7:30 p.m.  
 Formal meeting starts at 8:00 p.m.

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